WHAT IS CLAIMED IS:

1. A method of analyte identification comprising:

   receiving data from a plurality of sensor sites formed on an integrated circuit, wherein a sensor material is constrained at the sensor site and has regions of a nonconductive organic material and a conductive material, and in the presence of an analyte, the sensor material has measurable changes in an electrical property;

   storing analog weights from the plurality of sensor sites; and

   using the analog weights to identify an analyte.

2. The method of claim 1 wherein the analog weights are stored in an analog memory.

3. The method of claim 1 wherein the analog weights are stored using a digital memory.

4. The method of claim 1 wherein the analog weights are stored using nonvolatile analog memory cells.

5. The method of claim 1 further comprising:

   perturbing the analog weights by a pertubation of equal magnitude.

6. The method of claim 1 further comprising:

   measuring an output error using a result of perturbing the analog weights.

7. The method of claim 5 wherein the perturbation has a random sign.

8. The method of claim 1 wherein the electrical property is resistance.

9. The method of claim 1 wherein the electrical property is capacitance.

10. The method of claim 1 wherein the electrical property is impedance.

11. The method of claim 1 wherein the analog weights are stored in an analog form in a plurality of floating gate device memory cells.

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1   12.   The method of claim 1 wherein using the analog weights comprises

2   comparing the stored analog weights against a set of analog weights for previously identified

3   analytes.

1   13.   The method of claim 12 wherein using the analog weights further

2   comprises:

3   identifying the analyte as one of the previously identified analytes when the

4   stored analog weights are similar to the set of analog weights of the previously identified

5   analyte.